

RECEIVED
CENTRAL FAX CENTER

JUL 21 2009

IN THE CLAIMS

Please amend the claims as follows:

1. (original) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid.

2. (currently amended) A lens according to claim 1, wherein said colour change correcting means comprises a relatively small quantity of dye or similar pigmentation material added to the non-colourless fluid (A) in an effective amount to approximately counteract the effect thereof on the colour of the image.

3. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein said colour change correcting means comprises colour filter means placed in the lightpath (100) to counteract the effect of said non-colourless fluid (A) on the colour of the image.

4. (previously presented) A lens according to claim 1, wherein said colour change correcting means comprises a relatively small quantity of dye or similar pigmentation material added to the fluid (B) other than the non-colourless fluid (A) in an effective amount to approximately counteract the effect thereof on the colour of the image.

5. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein the dye or other pigmentation material has substantially the same level and type of colour absorption as the non-colourless fluid (A).

6. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein the inner wall of said fluid chamber (5) is shaped such that the thickness of the non-colourless fluid layer is substantially the same, irrespective of the shape of the meniscus (14).

7. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein the non-colourless fluid is a liquid having an index of refraction greater than 1.5.
8. (original) A lens according to claim 7, wherein the index of refraction of said non-colourless fluid is greater than 1.7.
9. (previously presented) A lens according to claim 7, wherein the non-colourless fluid comprises an oil having a refractive index greater than 1.5.
10. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein the non-colourless fluid has a refractive index greater than 1.7.
11. (previously presented) A lens according to claim 1, wherein said non-colourless fluid is yellow, red or brown.

12. (previously presented) A lens according to claim 1, wherein the second fluid (B) is axially displaced from the first fluid (A), the fluids (A,B) being in contact over a meniscus (14), the lens further comprising a first electrode (2) and a second electrode (12), wherein the shape of the meniscus (14) can be controlled in dependence on the application of a voltage between the first electrode (2) and the said second electrode (12).

13. (currently amended) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, wherein the second fluid (B) is axially displaced from the first fluid (A), the fluids (A,B) being in contact over a meniscus (14), the lens further comprising a first electrode (2) and a second electrode (12), wherein the shape of the meniscus (14) can be controlled in dependence on the application of a voltage between the first electrode (2) and the said second electrode (12), comprising a substantially cylindrical fluid chamber (5), and a fluid contact layer (10) arranged on the ~~inside~~ inside of the cylinder wall.

14. (original) A lens according to claim 13, wherein the first electrode (2) is separated from the first fluid (A) and the second fluid (B) by the fluid contact layer (10), and the second electrode (12) is arranged and configured to act on the second fluid (B).

15. (previously presented) A lens according to claim 13, wherein the fluid contact layer (10) is arranged to have a wettability by the second fluid (B) which varies under the application of a voltage between the first electrode (2) and the second electrode (12), such that the shape of the meniscus (14) varies in dependence on the said voltage.

16. (previously presented) A lens according to claim 13, wherein the wettability of the fluid contact layer (10) by the second fluid (B) is substantially equal on both sides of the intersection of the meniscus (14) with the fluid contact layer (10) when no voltage is applied between the first and second electrodes (2,12).

17. (previously presented) A lens according to claim 13, wherein the first fluid (A) includes an insulating fluid and the second fluid (B) includes a conducting liquid.

18. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, and comprising a chamber (125) defined by at least one side wall having an optical axis (90) extending longitudinally through the chamber (125), wherein the chamber (125) contains the fluids (A,B), which are in contact over a meniscus (150), the lens further comprising at least one pump (110) for altering the relative volume of each of the fluids (A,B) contained within the chamber (125).

19. (original) A lens according to claim 18, wherein the perimeter of the meniscus (150) is constrained by the side wall, and the at least one pump (110) is arranged to controllably alter the position of the meniscus (150) along the optical axis by altering the relative volume of each of the fluids (A,B) contained within the chamber (125).

20. (original) A lens according to claim 18, wherein the perimeter of the meniscus (150) is fixedly located on an internal surface of the chamber (125) and the at least one pump (110) is arranged to controllably alter the shape of the meniscus (150) by altering the relative volume of each of the fluids (A,B) contained within the chamber (125).

21. (previously presented) A lens according to claim 18, wherein the wettability of the internal surface of the chamber (125) varies longitudinally, and is arranged to be controllably altered by the electrowetting effect.

22. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid, arranged to provide a variable zoom setting for a beam of radiation, and comprising a switchable optical element having a first mode and a second mode, the element including the first fluid (A), the second fluid (B) and a wavefront

modifier (26) having a part (28) through which the radiation is arranged to pass, where in the first mode, the switchable optical element has a first fluid configuration in which the part (28) is substantially covered by the first fluid (A) and in a second mode, the switchable optical element has a second different, fluid configuration in which the part (28) is substantially covered by the second fluid (B).

23. (original) A lens according to claim 22, wherein the switchable optical element (34) comprises a common first fluid electrode (50), a second different fluid electrode (34) and a third, different, fluid electrode (40), wherein in the first fluid configuration, the element is arranged to provide switchable electrowetting forces by applying a first voltage across the first (5) and second (34) fluid electrodes, and in the second fluid configuration, the element is arranged to provide different switchable electrowetting forces by applying a second, different voltage across the first (50) and third (40) fluid electrodes.

24. (currently amended) An optical system including a variable focus lens comprising a first fluid (A) and a second fluid (B), the fluids (A,B) having different indices of refraction, wherein the lens function of the variable focus lens can be selectively controlled, at least one of said fluids being non-colourless so as to absorb at least a portion of a light beam passing therethrough and causing a colour change in an image of an object compared with the object itself, the optical system further comprising means for correcting for said colour change so that the color of the image of the object is the same as the object.

25. (previously presented) An optical system including a variable focus lens comprising a first fluid (A) and a second fluid (B), the fluids (A,B) having different indices of refraction, wherein the lens function of the variable focus lens can be selectively controlled, at least one of said fluids being non-colourless so as to absorb at least a portion of a light beam passing therethrough and causing a colour change in an image of an object compared with the object itself, the optical system further comprising means for correcting for said colour change, and comprising an electronic image sensor, wherein means are provided for electronically adjusting the white balance of the image so as to counteract the effect on the colour thereof by the non-colourless fluid (A).

26. (previously presented) An optical system including a variable focus lens comprising a first fluid (A) and a second fluid (B), the fluids (A,B) having different indices of refraction, wherein the lens function of the variable focus lens can be selectively controlled, at least one of said fluids being non-colourless so as to absorb at least a portion of a light beam passing therethrough and causing a colour change in an image of an object compared with the object itself, the optical system further comprising means for correcting for said colour change, and arranged and configured such that the stop thereof is relatively close to the position of the meniscus (14) between the first fluid and the second fluid.

27. (previously presented) An optical system including a variable focus lens comprising a first fluid (A) and a second fluid (B), the fluids (A,B) having different indices of refraction, wherein the lens function of the variable focus lens can be selectively controlled, at least one of said fluids being non-colourless so as to absorb at least a portion of a light beam passing therethrough

and causing a colour change in an image of an object compared with the object itself, the optical system further comprising means for correcting for said colour change wherein said colour change correcting means comprises a dye or similar pigmentation material added to the non-colourless fluid (A) to counteract the effect thereof on the colour of the image.

28. (previously presented) An image capture device including a variable focus lens according to claim 1.

29. (previously presented) An optical scanning device for scanning an optical record carrier, the optical scanning device including a variable focus lens according to claim 1.

30. (previously presented) A variable focus lens comprising a first fluid (A) and a second fluid (B), said fluids (A,B) having different indices of refraction, wherein the lens function of said variable focus lens can be selectively controlled, at least one of said fluids (A,B) being inherently non-colourless, the lens further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid.

31. (previously presented) An optical system including a variable focus lens comprising a first fluid (A) and a second fluid (B), the fluids (A,B) having different indices of refraction, wherein the lens function of the variable focus lens can be selectively controlled, at least one of said fluids being non-colourless so as to absorb at least a portion of a light beam passing therethrough and causing a colour change in an image of an object compared with the object itself, the optical system further comprising means for correcting for said colour change.

32. (previously presented) A variable focus lens according to claim 30, wherein said inherently non-colourless fluid is yellow, red or brown.
33. (previously presented) An image capture device including a variable focus lens according to claim 30.
34. (previously presented) An optical scanning device for scanning an optical record carrier, the optical scanning device including a variable focus lens according to claim 30.
35. (new) An optical system comprising a variable focus lens containing a first fluid (A) and a second fluid (B) in a chamber, said fluids (A,B) having different indices of refraction, the fluids being immiscible, wherein the lens function of said variable focus lens can be selectively controlled by changing the shape of the boundary between said fluids by variation of an electrical field, at least one of said fluids (A,B) being non-colourless, the optical system further comprising means for correcting for a colour change which would otherwise occur in an image of an object compared with the object itself as a result of said non-colourless fluid.